

WHAT IS CLAIMED IS:

1. A printer that prints images on a recording medium fed through the printer, comprising:

a line feeding motor that actuates in predetermined stepped increments;

a line feeding device driven by the line feeding motor for feeding the recording medium through the printer;

a print head for printing a image on the recording medium by scanning across the recording medium and ejecting ink from nozzles, the print head having j nozzles spaced at a predetermined pixel resolution that is less than a pixel resolution printed by the printer, j being an integer number; and

a controller for controlling the line feeding motor to actuate in stepped increments and for controlling a number of the j nozzles utilized in printing the image,

wherein, for each stepped increment of the line feed motor, the line feeding device feeds the recording medium  $(m \times 1/n)$  pixels of the print head pixel resolution, where m and n are integer numbers and m is greater than n, and

wherein, the controller controls the j nozzles that print in any one scan of the print head based on the number of increments of the line feed motor.

2. A printer according to Claim 1, wherein m equals 3 and n equals 2.

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4. A printer according to Claim 2, wherein j equals 304 and the controller controls the 304 nozzles so that 300 or less nozzles print in any one scan of the print head.

6. A printer according to Claim 1, wherein the j nozzles are spaced at a 600 dpi resolution and the printed resolution of the printer is 1200 dpi.

8. A method of feeding a recording medium through a printer for printing images on the recording medium, comprising the steps of:  
actuating a line feeding motor in predetermined stepped increments;

printing a image on the recording medium by  
a print head scanning across the recording medium  
and ejecting ink from nozzles, the print head having  
j nozzles spaced at a predetermined pixel resolution

wherein, the j nozzles that print in any one scan of the print head are controlled based on the number of increments of the line feed motor.

12. A method according to Claim 9, wherein j equals 80 and the controller controls the 80 nozzles so that 78 or less nozzles print in any one scan of the print head.

14. A method according to Claim 8, wherein the printed resolution is a maximum printable resolution of the printer.

actuating a line feeding motor in  
predetermined stepped increments;

printing a image on the recording medium by a print head scanning across the recording medium and ejecting ink from nozzles, the print head having j nozzles spaced at a predetermined pixel resolution that is less than a pixel resolution printed by the printer, j being an integer number;

controlling a number of the j nozzles  
utilized in printing the image,

wherein, the j nozzles that print in any one scan of the print head are controlled based on the number of increments of the line feed motor.

17. Computer executable process steps according to Claim 16, wherein the increment of the line feed motor corresponds to a line feed of 3 pixels in a printed pixel resolution.

19. Computer executable process steps according to Claim 16, wherein j equals 80 and the controller controls the 80 nozzles so that 78 or less nozzles print in any one scan of the print head.

20. Computer executable process steps according to Claim 15, wherein the j nozzles are spaced at a 600 dpi resolution and the printed resolution of the printer is 1200 dpi.

21. Computer-executable process steps according to Claim 15, wherein the printed pixel resolution is a maximum printable resolution of the printer.

22. A computer-readable medium in which is stored computer executable process steps for feeding a recording medium through a printer for printing

24. A computer-readable medium according to Claim 23, wherein the increment of the line feed motor corresponds to a line feed of 3 pixels in a printed pixel resolution.

26. A computer-readable medium according to Claim 23, wherein j equals 80 and the controller controls the 80 nozzles so that 78 or less nozzles print in any one scan of the print head.

28. A computer-readable medium according to Claim 22, wherein the printed pixel resolution is a maximum printable resolution of the printer.

performing rasterization, color conversion and halftone processing on the image data;  
storing the processed image data in a print buffer for transmission to the printer;  
calculating a line skip amount;  
calculating a buffer offset amount; and  
adjusting a starting position for storing of the image data in the print buffer based on a result of the calculated buffer offset amount,  
wherein, the line skip amount and the buffer offset amount are calculated in a case where a first line of image data to be stored in the print buffer is white data.

31. An image processing method for processing image data to be sent to a printer, comprising the steps of:

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        storing the processed image data in a print
buffer for transmission to the printer;

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calculating a buffer offset amount; and

wherein, the line skip amount and the buffer offset amount are calculated in a case where a first line of image data to be stored in the print buffer is white data.

33. Computer-executable process steps for processing image data to be sent to a printer, comprising the steps of:



wherein, the line skip amount and the buffer offset amount are calculated in a case where a first line of image data to be stored in the print buffer is white data.

34. Computer-executable process steps according to Claim 33, wherein the printer has a line feed ratio of  $m \times 1/n$ , where  $m$  and  $n$  are integer numbers greater than 1,  $m$  is greater than  $n$ , and the line skip amount and the buffer offset amount are calculated based on the line feed ratio.

adjusting a starting position for storing  
of the image data in the print buffer based on a  
result of the calculated buffer offset amount,

36. A computer-readable medium according to Claim 35, wherein the printer has a line feed ratio of  $m \times 1/n$ , where  $m$  and  $n$  are integer numbers greater than 1,  $m$  is greater than  $n$ , and the line skip amount and the buffer offset amount are calculated based on the line feed ratio.

generating a line of image data;  
determining whether at least a number of  
contiguous lines of image data do not include a  
pixel to be printed, the number of contiguous lines  
corresponding to the feed amount unit; and  
sending line skip amount information to the  
printer based on a result of the determining step.

storing the line of image data in a print buffer for transmission to the printer; and calculating the line skip amount.

calculating a buffer offset amount; and

adjusting a starting position for storing

wherein, the skip amount and the buffer

40 Computer-executable process steps for

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generating a line of image data;
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determining whether at least a number of

sending line skip amount information to the

#### 41. Computer-executable process steps

storing the line of image data in a print

calculating the line skip amount.

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        calculating a buffer offset amount; and
        adjusting a starting position for storing
the image data in the print buffer based on a result
of the calculated buffer offset amount,

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43. A computer-readable medium on which are stored computer-executable process steps for processing image data to be sent to a printer that prints image data on a recording medium at a print pixel resolution greater than a resolution of a print head and feeds the recording medium in units of a feed amount corresponding to  $(m \times 1/n)$  pixels of the print head resolution, where  $m$  and  $n$  are integer numbers and  $m$  is greater than  $n$ , the process steps comprising:

generating a line of image data;  
determining whether at least a number of  
contiguous lines of image data do not include a  
pixel to be printed, the number of contiguous lines  
corresponding to the feed amount unit; and  
sending line skip amount information to the  
printer based on a result of the determining step.

44. A computer-readable medium according to Claim 43, wherein the determining step comprises:  
storing the line of image data in a print buffer for transmission to the printer; and  
calculating the line skip amount.

calculating a buffer offset amount; and  
adjusting a starting position for storing  
the image data in the print buffer based on a result  
of the calculated buffer offset amount,

46. A printer that prints images on a recording medium fed through the printer, comprising:

a line feeding device driven by the line feeding motor for feeding the recording medium through the printer; and

wherein, one increment of the line feed motor results in a feed amount of  $m/n$  times the print head nozzle spacing, where  $m/n$  is greater than 1, and  $m$  and  $n$  are integer values where  $m$  is greater than  $n$ , and

47. A printer according to Claim 46,  
wherein m equals 3 and n equals 2.

49. A printer according to Claim 48,  
wherein the print head comprises 304 nozzles and 300  
or less nozzles are utilized in printing any one  
band.

49. A printer according to Claim 48,  
wherein the print head comprises 304 nozzles and 300  
or less nozzles are utilized in printing any one  
band.

50. A printer according to Claim 48, wherein the print head comprises 80 nozzles and 78 or less nozzles are utilized in printing any one band.

51. A printer according to Claim 46,  
wherein the first resolution corresponding to the  
nozzle spacing is 600 dpi.

52. A printer according to Claim 46,  
wherein the first resolution corresponding to the  
nozzle spacing is 600 dpi, m equals 3 and n equals  
2.

53. A method of feeding a recording medium through a printer for printing images on the recording medium, comprising the steps of:

actuating a line feeding motor in stepped increments;

feeding the recording medium through the printer by a line feeding device driven by the line feeding motor; and

performing banded printing of an image on  
the recording medium by a print head scanning across

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~~60. Computer-executable process steps for feeding a recording medium through a printer for printing images on the recording medium, comprising the steps of:~~

feeding the recording medium through the printer by a line feeding device driven by the line feeding motor; and

wherein, one increment of the line feeding motor results in a feed amount of  $m/n$  times the print head nozzle spacing, where  $m/n$  is greater than 1, and  $m$  and  $n$  are integer values where  $m$  is greater than  $n$ , and

61. Computer-executable process steps according to Claim 60, wherein m equals 3 and n equals 2.

62. Computer-executable process steps according to Claim 60, wherein less than all of the nozzles of the print head are utilized in printing



performing banded printing of an image on  
the recording medium by a print head scanning across

the recording medium, the print head having nozzles spaced at a first resolution,

wherein, one increment of the line feeding motor results in a feed amount of  $m/n$  times the print head nozzle spacing, where  $m/n$  is greater than 1, and  $m$  and  $n$  are integer values where  $m$  is greater than  $n$ , and

wherein, to print the image, the line feeding motor is actuated  $n$  increments, or an integer multiple of  $n$  increments between bands.

68. A computer-readable medium according to Claim 67, wherein  $m$  equals 3 and  $n$  equals 2.

69. A computer-readable medium according to Claim 67, wherein less than all of the nozzles of the print head are utilized in printing the image in any one band and a number of the nozzles utilized is related to  $m/n$ .

70. A computer-readable medium according to Claim 69, wherein the print head comprises 304 nozzles and 300 or less nozzles are utilized in printing any one band.

71. A computer-readable medium according to Claim 69, wherein the print head comprises 80 nozzles and 78 or less nozzles are utilized in printing any one band.

72. A computer-readable medium according to Claim 67, wherein the first resolution corresponding to the nozzle spacing is 600 dpi.

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73. A computer-readable medium according to Claim 67, wherein the first resolution corresponding to the nozzle spacing is 600 dpi, m equals 3 and n equals 2.